AWIPS SYSTEM ADMINISTRATION NOTE 4 (for Electronics Systems Analysts)
Engineering Division
W/OSO321: FJZ

SUBJECT : Advanced Weather Interactive Processing System (AWIPS) Modem Setup and Simpact Configuration File Change for NEXRAD Build 10 Sites

PURPOSE : To increase the AWIPS Build 4.0.X dedicated modem speed to 14.4 Kbps and to change the Simpact configuration file line speed to 14.4 Kbps at a NEXRAD Build 10 site.

SECURITY LEVEL: root/fxa

GENERAL

The following procedures apply to AWIPS Build 4.0.X and must be performed after NEXRAD Build 10 is installed. NEXRAD Build 10 capabilities available in AWIPS Build 4.0.X are as follows:

- Data line speed increase from 9.6 Kbps to 14.4 Kbps.
- Increase in the number of RPS list products from 20 to 31.

Not until AWIPS Build 4.1 can all the Build 10 radar product options and capabilities be processed and displayed. To increase the line speed, three configuration changes must be made:

- Change the “Max Rate=” and “DTE Rate=” modem settings from “9600" to “14.4."
- Modify the number of products allowed in the RPS list.
- Modify the SIMPACT configuration file that identifies the line speed settings for the permanent virtual circuit (PVC).

The SIMPACT file configuration procedure does not have to be performed if Build 4.1 has been installed. In Build 4.1, the SIMPACT configuration file is overwritten to reflect the correct line speed. However, modem settings and the RPS list editing will still need to be performed for Build 4.1.

The modem front panel button functions are described below and are shown as they appear when facing the rack (modem rotated 90 degrees from the stand-alone version).

Return key - when pressed within a branch of the menu, changes the Liquid Crystal Display (LCD) to the branch title screen (e.g. `TERMINAL OPT'S`). When pressed at a branch title screen, changes the LCD to the home screen (e.g. `DATA 14400 T/D?`).

Down key - moves from branch to branch from the main menu and selects individual setting options within the branches.

Across key - moves the screen along the branches of the modem menu tree. It also will move the cursor across data entry menus one character (or digit) at a time (e.g. S-Reg menus).

Enter key - selects the item displayed on the LCD as the current setting (if the screen displayed an = sign, it was already the current setting) or initiates an action (as in "Reinit Memory?").

PROCEDURE

A. Changing the Modem "Max Rate=" and "DTE Rate=" settings from "9600" to "14.4"

The complete modem verification procedure is described in the *AWIPS Information Note 7*. Locate the synchronous dedicated and dial-up AWIPS modems and verify that the line configuration reflects a "Max Rate=14.4 and a DTE Rate=14.4. **The modem data rate configuration changes, described below, also applies to AWIPS Build 4.1 sites.** To change the settings, follow the procedure outlined below:

1. Changing the modem "Max Rate=" to "14.4."
   a. Press **Down** button to advance to "MODULATION OPTION."
   b. Press **Across** button to advance to "MAX RATE=."
   c. Press **Down** button until "14.4" is displayed.
   d. Press **Enter** button.
   e. Press **Return** button once.
2. Changing the modem "DTE Rate=" to "14.4."
   a. Press **Down** button to advance to "TERMINAL OPTION."
   b. Press **Across** button to advance to "DTE RATE=."
   c. Press **Down** button until "14.4" is displayed.
   d. Press **Enter** button.

e. Press **Return** button twice.

NOTE

If the RPG and AWIPS modems fail to connect, consult the NEXRAD Software Note 11, page B11 for the proper -15 dBm transmit level settings.

3. It is important to verify that the NEXRAD and AWIPS modems have the proper signal quality (SQ) level. The SQ level may be verified and set by performing the built-in test procedure below.

   a. Press **Return** button twice to reach the home screen.

   b. Press the **ACROSS** key to advance to "Phase Jitter = __dg."

   c. Press the **DOWN** key to advance to "SQ = __ EP = __%."

   The SQ level should be between 5 and 9, with 9 being the highest or best reading. If the SQ level is less than 5, the TX output level at the other end should be adjusted in 1 dBm increments until the SQ reading is between 5 and 9.

NOTE

Line echoing caused by radical power increases will degrade the signal quality. Therefore, it is important to perform the SQ level check in gradual increments. This check should be performed on both ends of the circuit.

4. **Do not save changes unless all settings were entered correctly.** To return to the previously saved settings, power down the modem, and repeat steps 1 and 2. To save the modem setup changes, perform the following procedures:

   a. Press the **Across** button until "Save Changes = 1" is displayed.

   b. Press the **Down** button twice until "Save Changes = 3" is displayed.

   c. Press **Enter**.

   d. Press the **Return** button twice.

e. Press the **Across** button until “Power Up In = 1" is displayed.

f. Press the **Down** button twice until “Power Up In = 3" is displayed.

g. Depress **Enter** .

h. Depress the **Return** button twice.

B. Modifying RPS List

It is necessary to edit the “portInfo.txt” file to reflect the correct port assignment and maximum amount of products allowed in the RPS list. **The RPS list modifications also apply to AWIPS Build 4.1 sites.**

1. Login to a Telnet window and logon to ds1 as a **root/fxa** .

2. Change to the “portInfo.txt” directory by typing:

   cd /awips/fxa/data/localizationDataSets/<*siteID*>

3. Copy the “portInfo.txt” file to create the ”portInfo.144k” files in the /awips/fxa/data directory by typing:

   cp -p portInfo.txt /awips/fxa/data/portInfo.144k

4. Change to the “portInfo.144k” directory by typing:

   cd /awips/fxa/data/

4. Set the terminal environment to vt100:

   setenv TERM vt100

5. Open the vi editor to edit the “portInfo.144k” file:

   vi portInfo.144k

6. The listing should be similar to the one shown below:

   3 0 303 KWLX 20

7. The group of numbers and characters in the “portInfo.xxx” are identified as follows:

3	**0**	**303**	**KWLX**	**20**
Port Number	Simpact Board Number	Radar Decimal ID	Radar ID	Maximum Number of RPS Products

8. Verify the first group is a **3** (port typically used for the 14.4 Kbps data rate) and the fifth group is a **31** (max RPS product allowed for a 14.4 Kbps data rate).

9. If changes need to be made, move the cursor to the port number position and change the number to **3**. Then move the cursor to change the maximum RPS product list from **20** to **31** (**r** for replace, **i** for insert, and **x** for delete).

10. Press **Esc** then **:wq!**.

11. Verify the file changes were saved by typing:

    cat portInfo.144k

12. Copy the modified “portInfo.144k” file back to “portInfo.txt” on all devices to make the changes active.

    rcp -p portInfo.144k
    <*device name*>:/awips/fxa/data/localizationDataSets/<*siteID*>/portInfo.txt

    For example

    rcp -p portInfo.144k
    ws1:/awips/fxa/data/localizationDataSets/<*siteID*>/portInfo.txt

13. To prevent the “portInfo.txt” file from being overwritten when localization is performed, backup the “portInfo.txt” file to the following directory:

    cp /awips/fxa/data/localizationDataSets/<*siteID*>/portInfo.txt
    /awips/fxa/data/localization/<*siteID*>/<*siteID*>-portInfo.txt

14. The “portInfo.txt” file should be copied to all devices by using the following command:

    rcp -p /awips/fxa/data/localizationDataSets/<*siteID*>/portInfo.txt <*device name*>:/awips/fxa/data/localizationDataSets/<*siteID*>/<*siteID*>-portInfo.txt

This completes the “portInfo.xxxx” edit procedure.

C. Modifying the Simpact Configuration File

The instructions below describe the procedure to change the data rate in the Simpact configuration file from 9600 bps to 14400 bps. **This procedure must be performed after installing NEXRAD Build 10 and applies only to AWIPS Build 4.0.X sites.**

Identify the port on which the Build 10 NEXRAD Radar is connected. If in doubt, call the NCF at (301) 713-1284. To modify the SIMPACT configuration file, perform the following keystrokes:

1. Login to a Telnet window and logon to ds1 as **root/fxa**.

2. Type **cd /opt/freeway/bin** to change to the location of the PVC file.

3. Type **vi fw1000_pvc3.setup** (if port 3) or **vi fw1000_pvc4.setup** (if port 4).

4. Locate the line that reads **"RATE(9600)"** and change it to read **"RATE(14400)"**. If the line reads **"RATE(56000)"** there is no need to change the value.

5. Type **:wq!** to save the file or **:q!** if no changes have been made.

6. After the changes have been made, reset the Radar line by typing one of the following commands:

For Simpact Board	Ports	Command
0	0, 1, and 3	**icpReset0**
1	4 and 6	**icpReset1**

This completes the Simpact configuration file edit procedure.

D. Reporting Modification

Target date for the modem setup and Simpact Configuration File change shall be coordinated with the AWIPS focal point or the Meteorologist-in-Charge. Report the completed modification on WS-Form A-26, Engineering Management Reporting System, according to the instructions in EHB-4, part 2, using reporting code AWIPS. In addition, record the modification number in block 17(a) as A4. See figure 1 for a completed sample of the WS-Form A-26.

E. Point of Contact

For questions pertaining to this note, please contact Franz J.G. Zichy at 301-713-1833 ext. 128 or his pager number at 301-610-1710.

John McNulty
Chief, Engineering Division

WS HQ USE ONLY

WS FORM A-26 (4/94)
Supersedes WS Form A-25 and WS Form A-26, which are obsolete.

ENGINEERING MANAGEMENT REPORTING SYSTEM
MAINTENANCE RECORD

Document Number: G 49978

General Information

1. Open Date	Time	2. Status	3. Response Priority (check one)	4. Close Date	Time
12 / 03 /98	0900	MRB	○ Immediate ○ Low ○ Routine ● Not Applicable	12 / 03 /98	1100

5. Description

AWIPS MODEM SETUP AND SIMPACT CONFIG FILE CHANGE FOR NEXRAD BUILD 10

Equipment Information

6. Station ID	7. Equipment Code	8. Serial Number	9. TM	10. AT	11. How Mal.
FFC	AWIPS	001	M	M	999

12. EQUIPMENT OPERATIONAL STATUS TIMES

a. Fully Operational	b. Logistics Delay	Partially Operational	c. All Other	d. Logistics Delay	Not Operational	e. All Other
			2:00			

13. Parts Failure Information

Block #	a. ASN	b. NSN	c. TM	d. AT	e. How Mal.	f. Qty.	g. Maint. Etc.
1							
2							
3							
4							
5							

14. Work Load Information

Type	Hrs/Hrs.
a. Routine	
b. Non-routine	
c. Travel	
d. Misc.	3:00
e. Overlap	

Miscellaneous Information

15. Maintenance Comments

PERFORMED MODIFICATION IN ACCORDANCE WITH AWIPS SYSTEM ADMIN NOTE 4

16. Initials: MRB

17. SPECIAL PURPOSE REPORTING	a. Mod. No.	b. Mod./Adj./Depot Date	c.	d.	e.
	A4	12/03/98			

18. CONFIGURATION MGMT. REPORTING (Use as directed)	a. Block #	b. Manufacturer Part No. o/New Part	c. Revision No. o/New Part

A-26 Form
Figure 1